DOCUMENT RESUME

ED 274 299 HE 019 778

AUTHOR Dirr, Peter J.
TITLE [Research on Evaluation of Instruction by Telecommunications.]
PUB DATE Apr 86
NOTE 18p.; Papers presented at the Annual Meeting of the American Educational Research Association (67th, San Francisco, CA, April 16-20, 1986) and the National Universities Continuing Education Association (Portland, OR, April 27, 1986).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Audio Equipment; *College Instruction; Computer Assisted Instruction; Consortia; Course Selection (Students); Educational Technology; Educational Television; Higher Education; *Instructional Material Evaluation; Instructional Materials; Material Development; *Media Selection; *Public Television; Telecourses; Use Studies
IDENTIFIERS Annenberg School of Communications DC; Corporation for Public Broadcasting

ABSTRACT

Perspectives about evaluating instruction by telecommunications are offered in two related conference presentations, based on the experience of the Annenberg/Corporation for Public Broadcasting Project. The project has two goals: to create high-quality college-level materials using telecommunications, and to demonstrate the application of telecommunications and information technologies to address the needs of colleges. While the project's research has largely focused on the evaluation of television courses, the application of computers and other technologies is also of concern. The following questions are considered in evaluating learning through telecommunications: (1) will the courses use effective production approaches and be academically sound; (2) will colleges adopt the courses and what will the adoption process be like; (3) will the programs be watched by informal learners; (4) which students will take the courses and how will they use and value the course components; (5) how can the learning effectiveness of the courses be assessed; (6) how to best measure the effectiveness of demonstration projects; and (7) what other areas should be evaluated? Reference is made to 20 studies about the adoption, use, and evaluation of the telecommunication materials. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Peter J. Dirr

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ED274299

Peter J. Dirr
Remarks for AERA Session

April 19, 1986

1. **Welcome.** Good morning. I'm Dr. Peter Dirr, Associate Director of the Annenberg/CPB Project. Welcome to our symposium, "Exchangeability of Telecourse and Regular Instruction: What Do Researchers and Students Learn?" This session grew out of several studies commissioned in 1984 and 1985 by the Annenberg/CPB Project to track the effectiveness and impact of the courses funded by the Project. My role today is to provide you with a brief background of the Annenberg/CPB Project and our research program and then to introduce to you the researchers who will tell you about the results of their studies.

2. **Annenberg/CPB Project.** The Annenberg/CPB Project was established in 1981 with a gift of $150 million from the Annenberg School of Communications to the Corporation for Public Broadcasting. The Project hopes to become the fulfillment of the dream of Ambassador Walter H. Annenberg to provide increased access to high quality college-level experiences to all Americans through telecommunications. The Project has two goals: (i) to create one or more collections of high-quality college-level materials using telecommunications, and (ii) to demonstrate the application of telecommunications and information technologies to address the needs of higher education. Since 1981, the Project has committed approximately $50 million to some 45 projects that fall into one or both of those goal areas. The first full courses became available for use by colleges and universities in Fall 1984, and that is when we began our research program.

   Today you will learn only about the evaluation of television courses because they were the first projects we funded. However, in the pipeline are several other projects that involve the application of other technologies, especially computers.

3. **The Research Program.** There were five major strands to our research program in 1984-85. You will hear about 2 of those strands in great detail today. I will tell you briefly about the other three. These activities are in addition to the formative evaluation that we require for each of the projects we fund.

   a. **Carriage and Audience.** We track the extent to which all our video courses are carried by public television

HE019478

stations and the sizes and characteristics of the audiences for those programs. We know, for instance, that in Fall '84 about 8 million people watched THE BRAIN each week, about 40 million different people over the course's 8 week period. We also know that over a million people tuned into THE NEW LITERACY each week.

b. **College Adoption.** We also track which colleges license the use of the courses and/or acquire videocassettes of the programs. In 1984-85 we also studied in depth the process and criteria used by colleges to decide whether or not to adopt our courses. That study, conducted by Bob Blackburn and Terry Ging of the University of Michigan, will be described in detail at a session that has been re-scheduled for Sunday at 2:15.

In brief, they found that certain course design elements affect course adoption, namely, (i) the content and production quality of the course; (ii) suitability of the difficulty level of the course; and (iii) the curricular adaptability of the course. They also found that certain diffusion elements correlate with adoption: (i) the cost of the course; (ii) the lead time available for preview and adoption; and (iii) the sources of information about the courses, with course adoption highest when information came from familiar and credible sources. Finally, the researchers found individual and institutional characteristics that were related to course adoption: (i) faculty and administrators with established positive attitudes toward telecourse education are more likely to adopt than others; (ii) institutions with histories of successful adoptions are more likely to adopt; and (iii) courses are more likely to be adopted where they are perceived as increasing enrollments. The study then went on to look at how faculty use the courses once they decided to adopt them.

Again, that session will be on Sunday at 2:15.

c. **Peer Evaluation.** Our third research area involved peer evaluations. The Project's courses are systematically submitted to national and international awards competitions and to date have been recognized for their excellence on more than 40 occasions.

d. **Student Use.** Fourth, we wanted to learn how students used the various course components. And in a few minutes you will hear from Dr. Valerie Crane, the researcher who conducted that study.

e. **Learning Effectiveness.** Finally, we wanted to determine whether there was some way to measure the learning effectiveness of our courses compared to other courses. We recognized the methodological pitfalls of this area

but we decided to explore it with two of our courses, THE CONSTITUTION: THAT DELICATE BALANCE and THE NEW LITERACY: AN INTRODUCTION TO COMPUTERS. Shortly, you will hear from the Rand and UCLA researchers who conducted that study, Steven Schlossman and Cathy Stasz and Noreen Webb. Richard Shavelson of UCLA and Rand served as Principal Investigator for the study but is unable to attend this session.

I and the rest of the staff at the Annenberg/CPB Project are indebted to these researchers for the insights they have given us about the work we are doing. I'm sure that will become apparent as you hear them describe their studies.

After the main speakers describe their studies, we will hear reactions from Dr. Gavriel Salomon of Tel Aviv University and Dr. Leigh Burstein of UCLA. We are grateful that they have consented to share their reactions with us, especially Gavi since he played a valuable role in helping us think through our research program in its early stages and has conducted some secondary analyses on the student use data.

PD/cb
59

Peter J. Dirr, Remarks
NUCEA Conference

April 27, 1986

RESEARCH ON EVALUATION OF INSTRUCTION BY TELECOMMUNICATIONS

A. Introduction

Thank you for inviting me to share with you some ideas about evaluating instruction by telecommunications. The entire emphasis of this conference is on "excellence." And it is the search for "excellence" that underlies all our evaluation efforts at the Annenberg/CPB Project.

Since my ideas are based largely on my experience with the Annenberg/CPB Project, I will start by reviewing briefly the mission and goals of the Project. Then I will describe the research and evaluation program we have designed for the Project. Finally, I will share with you the findings of several studies, some of which are still in progress. Along the way, I will refer to various reports and sources of further information, so you might want to keep a pen handy. In all, I will be referring to about 20 different studies.

B. Mission and Goals of the Annenberg/CPB Project

The Annenberg/CPB Project was established in 1981 with a gift of $150 million from The Annenberg School of Communications to the Corporation for Public Broadcasting. The Project hopes to become the fulfillment of the dream of Ambassador Annenberg to provide increased access to high-quality college-level experiences to all Americans through telecommunications.

The Project has two goals: (i) to create one or more collections of high-quality college-level materials using telecommunications, and (ii) to demonstrate the application of telecommunications and information technologies to address the needs of higher education. We have identified four target audiences for our activities: 1) the first and foremost is the distant learner, those persons who might like to pursue higher education but have not been able to take advantage of traditional opportunities; 2) the informal learner, those who might not be interested in college credit but do seek the intellectual stimulation that college-level materials can provide; 3) the on-campus student who might benefit from the availability of new, high-quality instructional materials; and 4) college faculty and administrators who might appreciate new models of

instruction and benefit from the new resources. Since 1981, the Project has committed approximately $50 million to some 45 projects that address one or both of those goal areas. The first full courses became available for use by colleges and universities in Fall 1984, and that is when we began our research and evaluation program.

Much, though not all, of our research to date has focused on the evaluation of television courses because they were the first projects we funded. However, in the pipeline are several other projects that involve the application of other technologies, especially computers.

C. **The Design of Our Research and Evaluation Program**

With all of these development activities underway, we set out to identify ways to track and monitor the impact of our work. We thought the best approach would be to design a research program around a series of questions. We identified seven areas.

1. Will the courses be academically sound? Will they use effective production approaches?

2. Will colleges and universities adopt the courses? What does the adoption process look like? Who makes the decisions? On what criteria?

3. Will the programs be watched by informal learners? How many?

4. Which students will take the courses? How will they use and value the course components?

5. How can the learning effectiveness of the courses be assessed?

6. What is the best way to measure the effectiveness of demonstration projects?

7. Are there other targets of opportunity for evaluation that the Project should embrace?

Using these questions, we were able to design a variety of approaches that appear to complement each other nicely. We contracted with third party evaluators for the various components. Their reports are beginning to give us a broad picture of our progress. We think you might be interested in some of the findings as you serve distant learners.

Before sharing the findings with you, let me show you a brief sampler of our video courses. Keep in mind as you watch this video montage that each course includes one or more textbooks, a study guide, and often other materials

such as audio cassettes or a book of readings.

/ SHOW SAMPLER /

E. **Findings From Selected Studies**

Those are the video courses we have been evaluating. In addition, we are tracking the audio courses and demonstration projects we have funded.

Now we get to the heart of the matter. What are we learning about learning through telecommunications? In selecting the studies to mention, I have included those I thought would be of greatest interest to you. They are spread across each of the seven areas in our research and evaluation program.

Research Area #1: Will the courses be academically sound? Will they use effective production approaches?

For each of our courses, we take three approaches to answering these questions. First, each project appoints an advisory committee of renowned individuals -- academic and production experts -- to oversee the development of the project, review scripts and programs, and offer constructive criticism to the development team.

Second, at least one lesson from each course is subjected to pilot testing with students and faculty. Typically, this testing takes place at several two-year and four-year colleges and universities across the country.

Finally, we submit each of our courses to appropriate awards competitions and academic critiques. To date, these peer evaluations have resulted in our courses being recognized for their excellence on more than forty occasions.

Research Area #2: Will colleges and universities adopt the courses. What does the adoption process look like? Who makes the decisions? On what criteria?

The answers to these questions require a variety of approaches that will extend over several years. Through our video distributors, PBS Adult Learning Service and Films Incorporated, we track the colleges, universities and other organizations that use our courses each semester. We look at course adoptions, audiovisual purchases, and off-air licenses. We look for trends across semesters to see, for instance, if course use is building or waning or if a particular course appeals more to two-year or four-year colleges.

Thus far, we have seen that: (a) our courses appeal about equally to two-year and four-year colleges; (b) adoption varies greatly from course to course, with THE NEW LITERACY accounting for well over half of all our adoptions; (c) adoptions are holding steady for our courses so far.

We will use this information in a variety of ways: (a) to zero in on the useful life of a course; (b) to promote certain courses to additional colleges and universities; and (c) to help guide future funding decisions.

We strive to view the adoption of our courses in a broader context of the general use of telecommunications by colleges and universities. So, in 1985, the Project co-funded with the National Center for Education Statistics the "Higher Education Utilization Study" (HEUS). This was a survey of all colleges and universities in the country to study the availability and use of video, audio, computer and related technologies. That study found that our course, THE NEW LITERACY, was the most highly used of all video courses and that THE CONSTITUTION: THAT DELICATE BALANCE and THE WRITE COURSE were among the top 25 courses. Some other findings from that study might interest you:

- More than 3/4 of all colleges and universities use video and audio for instruction.

- About 1/3rd of all colleges and universities use video for off-campus instruction and about 1/4 use audio for the same purpose.

- 1/3rd of all colleges and universities (some 900) offered one or more complete "telecourses" in 1984-85 and 9% offered an audio course, with public two-year institutions being slightly more likely to offer those courses than four-year or private institutions.

- The 900 institutions offered more than 10,000 video courses in 1984-85 for an average of 12 per institution. This is up substantially from the 6,000 to 7,000 courses offered by 735 colleges in 1979, the first time HEUS was conducted.

- The total enrollment in these courses was about 400,000 for an average of 38 students per course. This is down substantially from the total of 500,000 in 1979. It appears that the average class size has dropped from 75 to 38 as the number of course offerings has increased.

- 35% of all institutions belong to video consortia, up from 28% in 1979. Most have held their memberships for at least five years and are satisfied enough with the services of those consortia that they plan to remain

members for the next three years.

- Computers tend to overshadow audio and video technologies on campuses today.

- HEUS found that the most common uses of computers were for student hands-on learning about the uses of computers, and for the use of "general purpose applications software," such as word processing or electronic spreadsheets. The latter category is the fastest growing area of use.

- About 1/3rd of all colleges and universities belonged to a computer consortium in 1984-85, especially four year public colleges.

- About 2/3rds of all institutions provided financial assistance to faculty and students in buying computer hardware. The assistance included discount prices, loans, grants and group purchases.

- Decisions to use audio and video were more likely to involve and be made by a senior academic officer of the college whereas decisions to use computers were more likely to be made by the faculty themselves.

Well, I could go on for the next hour with results from HEUS. It was a comprehensive study of the terrain in 1984-85. The final report of the study will be available in June or July from CPB's Office of Corporate Communications, 1111 Sixteenth Street, N.W., Washington, D.C. 20036. The cost will be five dollars.

We believe the "numbers" we get from sources such as our distributors and HEUS are necessary, but not sufficient for our understanding of the telecourse adoption process. So, over the past year, we have funded two other studies to look at the adoption process.

Robert Blackburn and Terry Ging from the University of Michigan surveyed several hundred college administrators and telecourse faculty to probe the adoption process and the criteria used for adoption. Their findings fall into three categories:

1. They found certain course design elements that affect course adoption, namely (a) the quality of the course content and production values, (b) the suitability of the level of difficulty of the course, and (c) the curricular adaptability of the course.

2. They also found what they call diffusion elements that affect course adoption: (a) the cost of the course; (b) the lead time available for preview and adoption; and

(c) the sources of information about the course. Chances of adoption are highest when information comes from a familiar and credible source such as another faculty member or a telecourse coordinator.

3. Finally, the researchers found individual and institutional characteristics that are related to course adoption: (a) faculty and administrators with established positive attitudes; (b) institutions with histories of successful adoptions; and (c) the perception and expectation that the course could increase enrollments.

The final report of that study is also in its final stages of preparation. An executive summary of the study will be available from my office in four to six weeks. (Blackburn/Ging)

The second study we commissioned to look at the adoption process was conducted by Robert LaRose of the ELRA Group in San Francisco. He surveyed 154 college administrators and 154 faculty at two-year and four-year colleges that had used Annenberg/CPB Project courses in 1984-85. Here are just a few of his findings:

- Those 154 institutions had a total of 700 course offerings of our five courses. They were major users.
- Average course enrollments were 20 to 25.
- The median student retention rate was 80%.
- Colleges relied first of all on their own catalogs and class schedules to attract students to the courses and secondly on print advertising.
- 2/3rds of the colleges required class meetings during the courses. In future course offerings several would require even more meetings because they see these as the most productive form of student-faculty contact (as compared to correspondence or telephone contact).
- 80% of the faculty reported that the telecourse students performed better than or as well as non-telecourse students.
- 3/4 of these heavy telecourse users were members of video consortia. That is significant because course adoption was instigated more often by a consortium representative than any other source. That ties back into the Blackburn finding that the source of information is an important diffusion element.
- Adoption decisions are made more often by college

administrators than by individual faculty members. That is consistent with the findings of the HEUS report. The faculty role in the adoption process at most institutions seems to include reviewing the course materials, preparing a course syllabus, identifying additional readings, and then offering the course.

- Most faculty report that the incentive and reward systems at their colleges are either neutral or positive toward telecourses. The positive characterisitics included things such as greater instructional flexibility, higher quality of the telecourse students, and in a few instances, extra compensation. Only 20% reported feeling penalized, and the one thing mentioned most often was reduced contact with students.

- This study found that the telecourse adoption process takes an average of six months.

- The major reasons colleges give for adopting telecourses are: (a) to attract new students (consistent with the Blackburn study), (b) because of the quality of the course content (again, consistent with the Blackburn study), and (c) they provide colleges with an opportunity to offer new courses.

- The study identified three major barriers to telecourse adoption: (a) faculty resistance, especially due to a fear of being replaced, (b) their cost, and (c) incompatibility of available courses with current college offerings.

An executive summary of that study (ELRA) will be available from my office in about four to six weeks.

I realize I am spending a lot of time on this area of the adoption process. We thought it was an important area to study and I hope you find the information helpful. I want to mention to you just one more study that we assisted.

Raymond Lewis of Portland, Oregon conducted a study of faculty use of technology for CPB's Office of Planning and Policy Development. He conducted focus group discussions with 173 faculty from eight colleges and universities that had used audio, video and computer technologies for on-campus instruction. The messages came back loud and clear. These faculty wanted several things from the technologies:

- to use the resources as supplements to their regular classroom instruction;

- to have access to portions of series in addition to or instead of the entire series;

- to have better ways to know about the availability of audio and video programs and computer software;
- to know what other faculty who have used the programs think about them;
- to be able to clear the rights to use the materials easily and inexpensively.

The faculty saw the resources contributing significantly to their effectiveness by:

- increasing faculty effectiveness, especially by eliminating some repetitive tasks and shortening course management;
- increasing student effectiveness, in that they can speed up student learning;
- motivating the students, for instance, through video's ability to involve the student more emotionally and intellectually than other approaches; and
- expanding the learning environment to help students appreciate times, people, places and events not available in conventional classroom experiences.

Lewis documented many obstacles to the use of the technologies, including institutional policies, faculty fears, lack of funds, insufficient hardware, lack of time, the poor quality of available programming and software, lack of evaluative information, and confusion over copyright laws and policies.

A summary of that report is currently available from CPB's Office of Planning and Policy Development, 1111 Sixteenth Street, N.W., Washington, D.C. 20036. Ask for Research Notes Number 11.

We now move to **Research area #3**: Will the programs be watched by informal learners? How many?

We track the viewership of each of our courses each semester. PMN-TRAC, a research group in Sarasota, Florida reports, for instance, that in its first airing in Fall 1984, THE BRAIN was available to 96% of all U.S. households and was viewed in one out of every four U.S. households. That means that over the eight weeks of broadcast, some 30 to 40 million people saw at least part of that course. The "average" home tuned in to two episodes of the eight. The course was especially attractive to younger families spread over a wide range of social strata and educational backgrounds.

THE CONSTITUTION was available in 92% of all U.S. households and about 15% of the households viewed the series. This converts to more than 20 million persons. The audience was slightly older than THE BRAIN's but included the affluent and not-so-affluent, professionals, skilled and semi-skilled workers, and people not in the labor force.

CONGRESS, THE NEW LITERACY and THE WRITE COURSE were available in about half of all U.S. households and were viewed by anywhere from 3/4 million to 1.5 million persons. These numbers are small by television standards but significant in education terms. For comparison purposes, you might recall that in all of higher education in the United States, there are 12 million enrolled students.

Research area #4: What students will take the courses? How will they use and value the course components?

We commissioned two studies to look at these questions. And I am pleased to report to you that Executive Summaries are available for both of them from my office. Please ask for them by the name of the author.

The first was conducted by Ronald Brey of Austin Community College. He surveyed 8,000 students enrolled in 42 telecourses in Fall 1984. His major findings were:

- Over 2/3rds of the students were female.
- 77% were older than the traditional college age. The proportion of women increased with age.
- 20% were new students, drawn to the college by the television course. For 15% it had been six years or more since they had any formal education.
- 40% enrolled in the telecourse because an on-campus section of the course would conflict with their work schedules.
- For 2/3rds of the group, this was their first television course.
- 80% expected to view the lessons at home.
- The best way to "promote" the course, according to these students, was the college course schedule. Newspaper ads and word-of-mouth were also effective for attracting new off-campus students.

/ PUT UP TITLE SLIDE /

The second study of student demographics was conducted by

Valerie Crane, president of Research Communications Limited in Massachusetts. As part of a larger study that I will describe in a minute, she found that:

1. o 62% of the students were female (consistent with Brey).

2. o 80% were older than the traditional college age (consistent with Brey), with just under half being over 35.

3. o 14% were ethnic minorities (that parallels the national college population).

4. o 3/4 were working full-time or part-time outside of the home. Another 10% were full-time homemakers.

5. o 1/4 were not enrolled in a degree program. The others were about equally spread across all four years of college.

6. o Almost all had taken one or more prior courses on-campus and about 1/2 were currently enrolled in an on-campus course.

7. o For 57%, this was their first television course experience (relatively consistent with Brey).

8. o Most had high educational aspirations, with 40% expecting to complete a baccalaureate degree and another 40% expecting to get a masters or doctorate.

9. o Proportionately twice as many owned VCRs as the national average.

10. o The major reason these students chose the telecourse was convenience.

11. o And, consistent with Brey, most students learned about the courses from the college catalog, class schedule or brochure.

As I mentioned, these demographics were part of a larger study to learn how the students used the courses and how they valued the course components. The data were gathered through a series of focus group discussions with 200 telecourse students at 30 colleges and universities. The students were interviewed in the groups half way through the courses and at the end of the courses. The groups were drawn equally from students enrolled in all five of our courses in Fall 1984.

First we asked several questions about the television programs and print materials:

12. [Title Slide]

13. o We found that there is no single time of day or day of the week that is more convenient than others for students; if anything, Thursdays and Fridays are the least preferred days and Saturdays and Sundays the most preferred.

14. o A very interesting finding is that students prefer to view a full hour of programming in a single sitting rather than two half-hours at different times. This is consistent with what the students said in the interviews about their busy schedules and their need to juggle family, work and school responsibilities.

15. o We found that there is no single pattern for the use of the print materials, although the trend is to read the study guide before viewing and the text after viewing.

16. o The students rated the study guides and texts for our courses comparable to similar materials in other courses in every way.

    As a matter of fact, the students' overall assessment of the courses shows that they consider them comparable to other courses.

17. o They spend the same amount of time studying for these courses as on-campus courses.

18. o They rate the print materials equally difficult.

19. o And they express general satisfaction with the course, would recommend it to others, and would take telecourses in the future.

That study also taught us a lot about the importance of on-campus meetings, the ways students contact faculty, and so forth, but in the interest of time, I will not get into them now.

Research area #5: How can the learning effectiveness of the courses be measured?

We wanted to see if there was some way to measure the learning effectiveness of our courses compared to other courses. We knew that there was a long history of such attempts and there were methodological pitfalls with this type of study, so we contracted with Richard Shavelson of Rand Corporation to explore alternative approaches for THE CONSTITUTION and THE NEW LITERACY.

The Rand team identified four approaches to measuring the effectiveness of the courses and concluded that it was

possible but not feasible to conduct closely-controlled studies of effectiveness using traditional research approaches. The nature of telecourses, the types of students who take them, the substantial drop-out rates, and other factors make it nearly impossible, and at best very costly, to use traditional research approaches.

Instead, the Rand team recommended a quasi-experimental design that permits an assessment of the outcomes of telecourses in their natural settings, especially when they are offered over several semesters. They also argued that study after study has shown that the outcomes of telecourses are exchangeable with the outcomes of equivalent courses and that rather than focusing more effort in that area, attention should be devoted to studying the unique outcomes of telecourses.

That report will be available in about a month through my office.

Research area #6: What is the best way to measure the effectiveness of demonstration projects?

As we contemplated this question, we concluded that each of the demonstration projects we have funded so far is so different from the others that it is not possible to have a standard approach to assessing their effectiveness. Instead, we have attached an evaluation component to each project that is appropriate to the goals of the project.

So, for example, when the University of Nebraska developed six videodiscs in science laboratory instruction, they hired a third party evaluator to assess the effectiveness of the discs in seven different settings around the country.

She found that the discs were very effective compared to traditional laboratory experiments and the students learned in about 1/3 less time. She also found, however, that faculty members did not like the fact that students did not spend time talking to each other as they had in the "live" labs during "down" times.

A copy of the Executive Summary of that study is available through my office.

Another demonstration project, the Telecourse Enhancement Project at the University of South Florida, sought to determine whether electronic mail could be used effectively to overcome what some have called "the loneliness of the long distance learner." The evaluation of that project tracked three different classes of the CONGRESS telecourse. The results are just becoming available, so it is premature for me to share them with you. I will probably have a report available for distribution by mid-summer.

A third demonstration project was the Electronic Text Project that looked at several applications of electronic text in higher education. In that case, a great deal of the evaluation was formative, documenting what it takes to operate an electronic text system, how to format information for electronic text distribution, cost factors in electronic text, a history of electronic text in higher education, and other similar issues.

The project resulted in 10 reports, all of which are available from The Electronic Text Consortium, c/o John Witherspoon at San Diego State University. It is probably the largest collection of information about electronic text in higher education in the country.

We continue to take this approach of requiring evaluation studies that are appropriate for the goals of each of our demonstration projects.

Finally, we reach **Research area #7:** Are there other targets of opportunity for evaluation that the Project could pursue?

The answer has been a resounding "Yes." Time does not permit me to describe each in detail. It will have to suffice just to mention them. If you are interested in any of them I can follow-up later.

1. Home Information Technology Study, conducted by RTI for CPB and NCES, to measure the availability and use of telecommunications technologies in the home.

2. Uses of Correspondence Courses, conducted by Research Communications Limited to compare how students use correspondence courses to how they use telecourses.

3. The Market for Audio Augmented Courses, conducted by the University of Wisconsin - Extension, to study student acceptance of courses that have audio components.

4. Uses of MECHANICAL UNIVERSE, an Annenberg/CPB Project staff study, to determine whether colleges that were using MECHANICAL UNIVERSE had developed new materials to help students deal with the math required by the course.

5. MECHANICAL UNIVERSE Textbook Sales Study, another study conducted by the Annenberg/CPB Project staff, to probe the purchase and use of this textbook by persons not enrolled in the course.

I have come to the end, but it is only a beginning. We are committed to pursuing, with you and others, how best to use the enormous powers of the telecommunications technologies to improve access to high quality higher education

experiences, in other words, how to accomplish "excellence" in higher education for more Americans.

I have described only studies recently completed or well underway. We are initiating new efforts each year and I hope to be able to share additional findings with you at future conferences.

If any of the studies I have mentioned interests you, please fill out one of these response cards and I will get more information to you. I have brought a few copies of some information with me, but not enough for everyone. I will also point out that we have available the proceedings of a conference we helped support at Georgia State University. The report is entitled, "Integrating Communication Technologies." If you would like a copy of that report, please write it on the card.

Now it is your turn. Do you have questions about some of the studies I mentioned? But more important from my point of view, do you have information and experiences you can share with each other?

Thank you for inviting me to get the discussion started.

PD/cb
94